

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): An organic polymer light-emitting element material having a gold complex structure as a part of the side chain or crosslinking group.
2. (original): The organic polymer light-emitting element material as claimed in claim 1, wherein the molecular weight of the organic polymer is from 1,000 to 1,000,000.
3. (previously presented): The organic polymer light-emitting element material as claimed in claim 1, which is obtained by polymerizing a composition containing a polymerizable gold complex where at least one ligand has a polymerizable functional group as the substituent.
4. (original): The organic polymer light-emitting element material as claimed in claim 1, wherein the gold complex structure has an organic phosphine compound as at least one ligand.
5. (original): The organic polymer light-emitting element material as claimed in claim 3, wherein at least one ligand of the polymerizable gold complex is an organic phosphine compound.
6. (original): The organic polymer light-emitting element material as claimed in claim 5, wherein at least one organic phosphine compound as the ligand has a polymerizable functional group as the substituent.
7. (previously presented): The organic polymer light-emitting element material as claimed in claim 4, wherein the organic phosphine compound is represented by formula (1):



wherein R^1 to R^3 each independently represents a hydrogen atom, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an alkoxy group having 1 to 15 carbon atoms which may have a substituent, an aryl group having 6 to 15 carbon atoms which may have a substituent, a heteroaryl group having 3 to 15 carbon atoms which may have a substituent or an aryloxy group having 6 to 15 carbon atoms which may have a substituent.

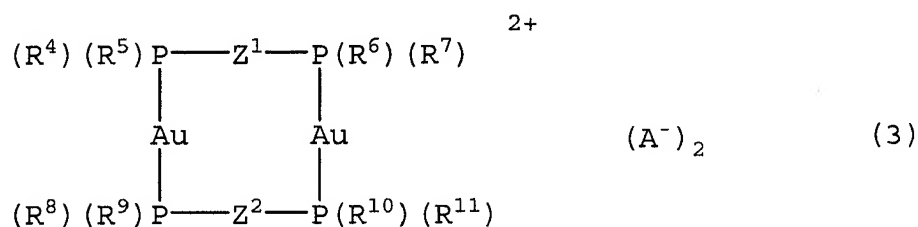
8. (previously presented): The organic polymer light-emitting element material as claimed in claim 4, wherein the organic phosphine compound is represented by formula (2):



wherein R^4 to R^7 each independently represents a hydrogen atom, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an alkoxy group having 1 to 15 carbon atoms which may have a substituent, an aryl group having 6 to 15 carbon atoms which may have a substituent, a heteroaryl group having 3 to 15 carbon atoms which may have a substituent or an aryloxy group having 6 to 15 carbon atoms which may have a substituent, and

Z^1 represents an organic group which crosslinks two phosphorus atoms, such as alkylene group having 1 to 20 carbon atoms which may have a substituent, alkylene group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, or arylene group having 6 to 20 carbon atoms which may have a substituent.

9. (previously presented): The organic polymer light-emitting element material as claimed in claim 3, wherein the polymerizable gold complex has a structure represented by formula (3):



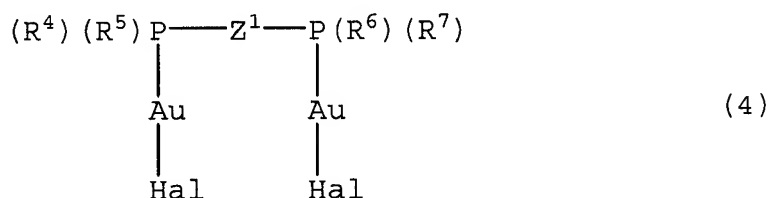
wherein R^4 to R^7 and Z^1 have the same meanings as in claim 8, R^8 to R^{11} each independently represents a hydrogen atom, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an alkoxy group having 1 to 15 carbon atoms which may have a substituent, an aryl group having 6 to 15 carbon atoms which may have a substituent, a heteroaryl group having 3 to 15 carbon atoms which may have a substituent or an aryloxy group having 6 to 15 carbon atoms which may have a substituent,

Z^2 represents an organic group which crosslinks two phosphorus atoms, such as alkylene group having 1 to 20 carbon atoms which may have a substituent, alkylene group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, or arylene group having 6 to 20 carbon atoms which may have a substituent, and

A^- represents a monovalent anion,

provided that at least one of R^4 to R^{11} , Z^1 and Z^2 has a polymerizable functional group.

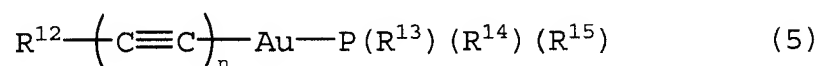
10. (previously presented): The organic polymer light-emitting element material as claimed in claim 3, wherein the polymerizable gold complex has a structure represented by formula (4):



wherein R^4 to R^7 and Z^1 have the same meanings as in 8, and Hal represents a halogen atom, provided that at least one of R^4 to R^7 and Z^1 has a polymerizable functional group.

11. (previously presented): The organic polymer light-emitting element material as claimed in claim 1, wherein the gold complex structure has at least one alkynyl ligand.

12. (previously presented): The organic polymer light-emitting element material as claimed in claim 3, wherein the polymerizable gold complex has a structure represented by formula (5):



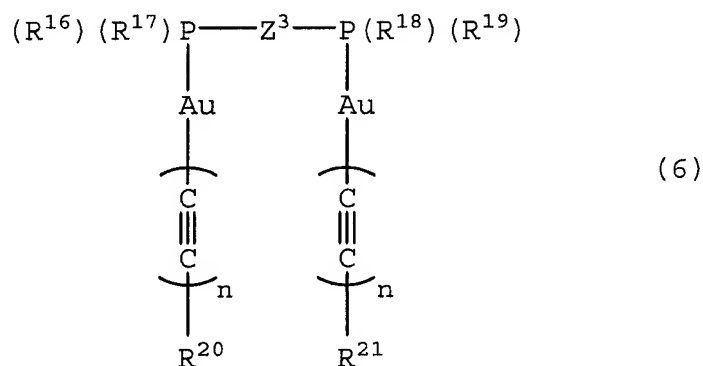
wherein R^{12} represents a hydrogen atom, a cyano group, a silyl group having 3 to 20 carbon atoms, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an aryl group having 6 to 15 carbon atoms which may have a substituent, a heteroaryl group having 3 to 15 carbon atoms which may have a substituent, an acyl group having 1 to 15 carbon atoms, a carboxyl group, or an alkoxy carbonyl group having 2 to 15 carbon atoms,

R^{13} to R^{15} each independently represents a hydrogen atom, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an alkoxy group having 1 to 15 carbon atoms which may have a substituent, an aryl group having 6 to 15 carbon atoms which may have a substituent, a heteroaryl group having 3 to 15 carbon atoms which may have a substituent or an aryloxy group having 6 to 15 carbon atoms which may have a substituent, and

n represents an integer of 1 to 5,

provided that at least one of R^{12} to R^{15} has a polymerizable functional group.

13. (previously presented): The organic polymer light-emitting element material as claimed in claim 3, wherein the polymerizable gold complex has a structure represented by formula (6):



wherein R^{16} to R^{19} each independently represents a hydrogen atom, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an alkoxy group having 1 to 15 carbon atoms which may

have a substituent, an aryl group having 6 to 15 carbon atoms which may have a substituent, a heteroaryl group having 3 to 15 carbon atoms which may have a substituent or an aryloxy group having 6 to 15 carbon atoms which may have a substituent,

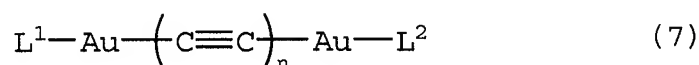
R^{20} to R^{21} each independently represents a hydrogen atom, a cyano group, a silyl group having 3 to 20 carbon atoms, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an aryl group having 6 to 15 carbon atoms which may have a substituent, a heteroaryl group having 3 to 15 carbon atoms which may have a substituent, an acyl group having 1 to 15 carbon atoms, a carboxyl group, or an alkoxy carbonyl group having 2 to 15 carbon atoms, R^{20} and R^{21} may be linked with each other via a crosslinking group,

Z^3 represents an organic group which crosslinks two phosphorus atoms, such as alkylene group having 1 to 20 carbon atoms which may have a substituent, alkylene group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, or arylene group having 6 to 20 carbon atoms which may have a substituent, and

n represents an integer of 1 to 5,

provided that at least one of R^{16} to R^{21} and Z^3 has a polymerizable functional group.

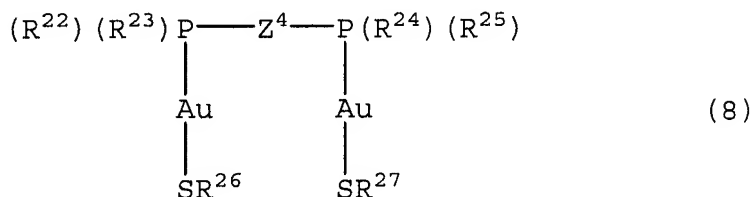
14. (previously presented): The organic polymer light-emitting element material as claimed in claim 3, wherein the polymerizable gold complex has a structure represented by formula (7):



wherein L^1 and L^2 each represents a monodentate or bidentate ligand, at least one of L^1 and L^2 is the organic phosphine compound described in claim 7 ~~or 8~~, and n represents an integer of 1 to 5.

15. (previously presented): The organic polymer light-emitting element material as claimed in claim 3, wherein the polymerizable gold complex has at least one thiolato ligand.

16. (previously presented): The organic polymer light-emitting element material as claimed in claim 3, wherein the polymerizable gold complex has a structure represented by formula (8):



wherein R^{22} to R^{25} each independently represents a hydrogen atom, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an alkoxy group having 1 to 15 carbon atoms which may have a substituent, an aryl group having 6 to 15 carbon atoms which may have a substituent, a heteroaryl group having 3 to 15 carbon atoms which may have a substituent or an aryloxy group having 6 to 15 carbon atoms which may have a substituent,

R^{26} and R^{27} each independently represents a hydrogen atom, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an aryl group having 6 to 15 carbon atoms which

may have a substituent, or a heteroaryl group having 3 to 15 carbon atoms which may have a substituent, and R^{26} and R^{27} may be linked with each other via a crosslinking group,

Z^4 represents an organic group which crosslinks two phosphorus atoms, such as alkylene group having 1 to 20 carbon atoms which may have a substituent, alkylene group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, or arylene group having 6 to 20 carbon atoms which may have a substituent,

provided that at least one of R^{22} to R^{27} and Z^4 has a polymerizable functional group.

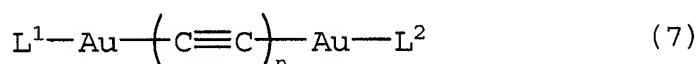
17. (previously presented): The organic polymer light-emitting element material as claimed in claim 3, wherein the polymerizable functional group has radical polymerizability.

18. (previously presented): The organic polymer light-emitting element material as claimed in claim 3, wherein the polymerizable functional group is an organic group having a carbon-carbon double bond.

19. (previously presented): An organic polymer light-emitting element comprising a pair of electrodes having interposed therebetween at least one layer comprising the organic polymer light-emitting element material described in claim 1.

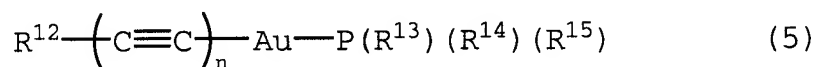
20. (previously presented): An organic polymer light-emitting element comprising a pair of electrodes having interposed therebetween at least one layer each comprising one or more organic polymer light-emitting element material described in claim 1.

21. (previously presented): The organic polymer light-emitting element material as claimed in claim 3, wherein the polymerizable gold complex has a structure represented by formula (7):



wherein L^1 and L^2 each represents a monodentate or bidentate ligand, at least one of L^1 and L^2 is the organic phosphine compound described in claim 8, and n represents an integer of 1 to 5.

22. (new): An organic polymer light-emitting element material having a gold complex structure as a part of the side chain or crosslinking group, which is obtained by polymerizing a composition containing a polymerizable gold complex represented by formula (5) or (9):

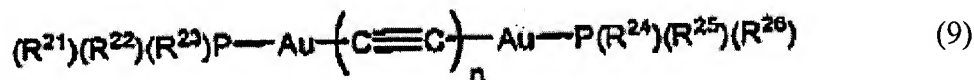


wherein R^{12} represents a hydrogen atom, a cyano group, a silyl group having 3 to 20 carbon atoms, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an aryl group having 6 to 15 carbon atoms which may have a substituent, a heteroaryl group having 3 to 15 carbon atoms which may have a substituent, an acyl group having 1 to 15 carbon atoms, a carboxyl group, or an alkoxy carbonyl group having 2 to 15 carbon atoms,

R^{13} to R^{15} each independently represents a hydrogen atom, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an alkoxy group having 1 to 15 carbon atoms which may have a substituent, an aryl group having 6 to 15 carbon atoms which may have a substituent, a heteroaryl group having 3 to 15 carbon atoms which may have a substituent or an aryloxy group having 6 to 15 carbon atoms which may have a substituent, and

n represents an integer of 1 to 5,

provided that at least one of R¹² to R¹⁵ has a polymerizable functional group:



wherein R²¹ to R²⁶ each independently represents a hydrogen atom, an alkyl group having 1 to 15 carbon atoms which may have a substituent, an alkyl group having 3 to 15 carbon atoms which has a cyclic structure and which may have a substituent, an alkenyl group having 2 to 15 carbon atoms which may have a substituent, an alkoxy group having 1 to 15 carbon atoms which may have a substituent, an aryl group having 6 to 15 carbon atoms which may have a substituent, a heteroaryl group having 3 to 15 carbon atoms which may have a substituent or an aryloxy group having 6 to 15 carbon atoms which may have a substituent, and

n represents an integer of 1 to 5,

provided that at least one of R²¹ to R²⁶ represents a polymerizable functional group.

23. (new): The organic polymer light-emitting element material as claimed in claim 22, wherein the polymerizable functional group is an organic group having a carbon-carbon double bond.

24. (new): An organic polymer light-emitting element comprising a pair of electrodes having interposed therebetween at least one layer comprising the organic polymer light-emitting element material described in claim 22.

25. (new): An organic polymer light-emitting element comprising a pair of electrodes having interposed therebetween at least one layer each comprising one or more organic polymer light-emitting element material described in claim 22.